



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/613,626

07/03/2003

Daniel Dulitz

060963-0006US

4349

24341

7590

04/22/2008

MORGAN, LEWIS & BOCKIUS, LLP.

2 PALO ALTO SQUARE

3000 EL CAMINO REAL

PALO ALTO, CA 94306

EXAMINER

DENNISON, JERRY B

ART UNIT

PAPER NUMBER

2143

MAIL DATE

DELIVERY MODE

04/22/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/613,626

Applicant(s)

DULITZ ET AL.

Examiner

Jerry Dennison

Art Unit

2143

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10/22/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28-30 is/are allowed.
- 6) ☒ Claim(s) 1-8, 13 and 18-27 is/are rejected.
- 7) ☒ Claim(s) 9-12 and 14-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 7/23/2004

DETAILED ACTION

1. This Action is in response to Application Number 10/613,626 received on 03 August 2003.
2. Claims 1-30 are presented for examination.

Claim Interpretation

3. In the interest of expedited prosecution, the Examiner would like to note that the present claims (i.e., claims 24) use functional language to describe claim elements. For example, the terms "configured for", "configured to", "enabled for", "adapted for", and "adapted to" raise questions as to the limiting effect of the functional language that follows them. The Examiner recommends amending the claims to contain positive recitations of the actions performed by the claim elements, rather than merely stating that the elements are "configured to" perform some future act. In the event that a hardware element is intended to contain software, which when executed, causes the hardware element to perform a function, the language of the claim should clearly express that relationship.

In the interest of expedited prosecution, all of these limitations have been rejected below, but Applicant is encouraged to amend the system/apparatus claims so that the claimed functions are positively recited, to ensure that those limitations may be given patentable weight.

4. Claim 24 includes a system comprising a master coupled to a plurality of slaves. For examination purposes, the master and slaves are interpreted to include hardware,

as shown in Figures 2A and 3A, thereby excluding the system to be interpreted as a software system. As such, claim 24 may only be interpreted as statutory subject matter.

Claim Objections

5. Claims 3-4, 24 are objected to because of the following informalities:

6. Claim 3 includes the following limitation that appear to have a minor typographical error (with possible corrections shown):

“establishing that said second slave is ~~an~~ a preferred slave”

7. Claim 4 includes the following limitation that appear to have a minor typographical error (with possible corrections shown):

“determining differences between maximum system resources of the system”

8. Claim 24 includes the following limitations that appear to have minor typographical errors (with possible corrections shown):

“receive state information from a first slave of said plurality of slaves;

determining determine that said first slave requires further data;

determining determine said master, in accordance with a predefined bandwidth resource allocation method, a second slave of said plurality of slaves from which to transfer said further data to said first slave;”

9. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1, 2, 24, 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
11. Claims 1, 2 and 20-24, 27 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete. Claim 1 recites the limitation, "determining at said master that said first slave requires further data". The limitation implies that the slave already received data before this limitation. However, it is unclear to Examiner what data this "further data" is referring.
12. Claim 2 recites the limitation "said local state" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.
13. Claim 20 includes the limitation, "before said receiving...generating said further data." It appears that this generating step would be performed at the master. However, it is unclear to Examiner how the master would already know what further data the slave needs before it receives the slave state.
14. Claim 27 includes the limitation, "preferably include", which renders the claim indefinite. The term "preferably" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Art Unit: 2143

15. Claim 27 includes the limitation, "wherein said master and each of said slaves preferably include verification procedures for verifying said data." It is unclear to Examiner as to what about the data is being verified.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8, 13, 18-19, 24-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Moore et al. (U.S. 6,618,752).

16. Regarding claims 1 and 24, Moore disclosed a method for distributing data over a widely distributed network, comprising:

receiving at a master, coupled to a plurality of slaves, a slave state of a first slave of said plurality of slaves (Moore, Fig. 4A, 402, Supervisory server receives request for multi stream from Jth Client Application);

determining at said master that said first slave requires further data (Moore, Fig. 4A, 402, "request for multicast stream");

determining at said master, in accordance with a predefined bandwidth resource allocation method, a second slave of said plurality of slaves from which to transfer said further data to said first slave (Moore, Fig. 4A, 414; Fig. 4B, 416, identifies child host with available bandwidth);

scheduling at said master, a data transfer of said further data from said second slave to said first slave (Moore, Fig. 4B, 418, "Supervisory server directs Jth child host to connect to lth child host"); and

transmitting instructions from said master to said first slave, instructing said first slave to obtain said further data from said second slave (Moore, Fig. 4B, 418, "Supervisory server directs Jth child host to connect to lth child host").

Claim 24 includes a system comprising a master and a plurality of dispersed slaves, with limitations that are substantially similar to claim 1. As shown in the above rejection, Moore disclosed a Supervisory server and dispersed client hosts that perform the limitations as claimed. As such, claim 24 is rejected under the same rationale.

17. Regarding claim 2, Moore disclosed wherein said local state of said first slave is a saved current state of file storage of said first slave including an indication of files that said first slave requires and an indication of what portion, if any, of a particular one of the files that said first slave has already stored in memory (Fig. 4A, 402).

18. Regarding claim 3, Moore disclosed the limitations as described in claim 1, including wherein said determining said second slave further comprises:

determining which available slaves of said plurality of slaves have said further data (Moore, Fig. 4A, 414); ascertaining system resources (Moore, Fig. 4B, 414, "available bandwidth", Fig. 4C, 420); and establishing that said second slave is an preferred slave, from said available slaves, from which to transfer said further data to said first slave, based on said system resources (Moore, Fig. 4C, 420, 426, 428).

19. Regarding claim 4, Moore disclosed the limitations as described in claim 3, including wherein said ascertaining further comprises: determining differences between maximum system resources of the system and resources in use (Moore, Fig. 4C, "available bandwidth" is the difference between maximum resources and resources in use).

20. Regarding claim 5, Moore disclosed the limitations as described in claim 1, including wherein said scheduling further comprises: determining overall system resources (Moore, see Abstract, "managing the network to minimize the bandwidth load on participating computers" requires determining overall system resources); and establishing that said second slave is a preferred slave from which to transfer said further data to said first slave based on said overall system resources (Moore, Fig. 4C, 420, 426, 428).

21. Regarding claim 6, Moore disclosed the limitations as described in claim 1, including wherein said scheduling further comprises:

determining incremental system resources that have changed since last determining said incremental system resources (Fig. 4A, 414, Fig. 4B 416); and

establishing that said second slave is a preferred slave from which to transfer said further data to said first slave based on said incremental system resources (Moore, Fig. 4C, 420).

22. Regarding claim 7, Moore disclosed the limitations as described in claim 1, including wherein said scheduling further comprises:

determining partition system resources of a partition of system components that includes said first slave (Moore, Fig. 4A, 420); and

establishing that said second slave is a preferred slave from which to transfer said further data to said first slave based on said partition system resources (Moore, Fig. 4B, 416).

23. Regarding claim 8, Moore disclosed the limitations as described in claim 1, including at any time before said scheduling:

determining at said master, overall system resources (Fig. 4A, 414);

computing at said master, a preferred data transfer schedule based on said overall system resources (Fig. 4B, 416);

storing said data transfer schedule on said master, such that said scheduling further comprises selecting said instructions from said data schedule (Fig. 4B, 418).

Art Unit: 2143

24. Regarding claim 13, Moore disclosed the limitations as described in claim 1, including

receiving said instructions at said first slave (Moore, Fig. 4C, 428);

requesting said further data from said second slave (Moore, col. 2, lines 54-60, establishing a connection and to receive the stream must include a request for the stream);

receiving at said first slave said further data from said second slave (Moore, col. 2, lines 54-57); and

storing said further data on said first slave (Moore, col. 1, lines 40-65, Moore disclosed the multicasting of streams including mp3s and images. In order for the end user to use this data, it must be stored, at least temporarily).

25. Regarding claim 18, Moore disclosed the limitations as described in claim 13, including verifying said further data (Moore, col. 5, lines 1-5, Moore disclosed using TCP/IP as the protocol, which includes acknowledgements).

26. Regarding claim 19, Moore disclosed the limitations as described in claim 13, including determining that no more data is required for a particular file; and updating said state to show that no more data is required for said particular file (Moore, col. 5, lines 1-5, Moore disclosed using TCP/IP as the protocol, which includes acknowledgements, i.e. an acknowledgement that a file or portion of a file was received).

27. Regarding claim 25, Moore disclosed the limitations as described in claim 24, including wherein said master comprises: a processor; communications circuitry; and a memory, comprising: a operating system; communication procedures for communicating with said plurality of slaves via said communication circuitry (Moore, col. 3, lines 50-67, "Exemplary Network" that includes computers); an indication maximum system resources; an indication of system resources in use; an indication of a state of each slave; and a scheduler for scheduling data transfer between slaves (col. 7, lines 30-50).

28. Regarding claim 26, Moore disclosed the limitations as described in claim 25, including a processor; communications circuitry; and a memory, comprising: a operating system; communication procedures for communicating with said plurality of slaves and said master via said communication circuitry (Moore, col. 3, lines 50-67, "Exemplary Network" that includes computers); a file set file containing a list of files required by said slave; and at least a portion of one of said files and an indication of how much of said file is still required (Moore, col. 2, lines 50-60, col. 5, lines 1-5, Moore disclosed the client requesting and receiving a data stream using TCP, which has flags that indicate the portions of the files received).

Art Unit: 2143

29. Regarding claim 27, Moore disclosed the limitations as described in claim 25, including wherein said master and each of said slaves preferably include verification procedures for verifying said data (col. 5, lines 1-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

30. Claim 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moore et al. (U.S. 6,618,752).

31. Regarding claim 20, Moore disclosed the limitations as described in claim 1, including the use of the TCP/IP protocol (Moore, col. 5, lines 1-5, Moore disclosed using TCP/IP as the protocol). Moore did not explicitly state before said receiving, generating said further data at a generator, generating a checksum of said further data at said generator; and sending said further data and said checksum to said second slave.

However, it is well known in the art that TCP includes a 16-bit Checksum field in its header. Therefore, since Moore disclosed the use of the TCP protocol, it would have been obvious to one of ordinary skill in the art to use the checksum field since doing so

would not require any extra implementation, and using the checksum would allow the recipient of the data to ensure that there were no errors in transmission.

32. Regarding claim 21, Moore disclosed the limitations as described in claim 1, including the use of the TCP/IP protocol (Moore, col. 5, lines 1-5, Moore disclosed using TCP/IP as the protocol). Moore did not explicitly state before said sending: generating a final flag at said generator, where said final flag indicates that said further data is a final block of data for a particular file, such that said final flag is sent to said second slave together with said further data and said checksum.

However, it is well known in the art that TCP includes a "FIN" flag (stands for "FINished"), which is used when the last packets are exchanged between a connection. Therefore, since Moore disclosed the use of the TCP protocol, it would have been obvious to one of ordinary skill in the art to use the checksum field since doing so would not require any extra implementation, as well as to allow the recipient of the data to ensure that there were no errors in transmission.

33. Regarding claim 22, Moore disclosed the limitations as described in claim 21, including receiving said further data at said second slave; and storing said further data on said second slave (col. 2, lines 55-60).

34. Regarding claim 23, Moore disclosed the limitations as described in claim 22, including after said second slave receives said further data, verifying said further data

based on said checksum (see above rejection for claim 21, checksum is used to verify that there were no errors in transmission of the data).

Allowable Subject Matter

Claims 28-30 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: While the prior art disclosed redirecting a slave's request for data to another slave (as seen in the above rejection), the prior art did not explicitly disclose each slave determining a current file length for each of the plurality of files, the current file length of each respective file representing an amount of the respective file currently stored at the slave, and sending slave state information to a master, the slave state information including the current file length for each of the plurality of files; and the master scheduling copy operations based on the slave state information, the scheduled copy operations between a first and second slave also based on bandwidth usage as claimed, in addition to the rest of the claimed limitations.

Claims 9-12 and 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art disclosed providing a request for a data stream to a master (as seen in the above rejection). Such would require obtaining an indication that the stream is needed. However, the prior art did not disclose obtaining a file set at said first slave,

where said file set is a list of files and version numbers of said files that said first slave must obtain.

The prior art also disclosed the TCP protocol which provides Acknowledgement packets as packets are received from the source. However, the prior art did not disclose wherein the source is different than where the ACK packets are being sent. As such, the prior art did not explicitly disclose ascertaining at said first slave, a revised state of said first slave; and transmitting said revised state to said master.

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Bret Dennison whose telephone number is (571) 272-3910. The examiner can normally be reached on M-F 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jerry Dennison/
Patent Examiner, Art Unit 2143